A Purely Technical Explanation Version of the Establishment of a Dialectical Logic Symbol System: Inspired by Hegel's Logic and Buddhist Philosophy

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Abstract

This is a condensed and supplementary explanation of my previously submitted preprint, “Establishment of a Dialectical Logic Symbol System: Inspired by Hegel’s Logic and Buddhist Philosophy.” The focus here is solely on demonstrating the technical correctness and operational mechanics of the dialectical logic symbol system. It provides a detailed account of how the system functions through geometric symmetry, logical transformations, and symbolic operations. This explanation is designed to clarify the technical foundation of the system, while omitting the broader philosophical discussions covered in the original preprint.

Basic Symbols of Dialectics

ἐ represents "self"

≡ represents "affirmation"

ὄ represents "being"

⌀ represents "nothing"

¬ represents "negation"

· represents "abstraction or concretization"

Basic Concepts and Mastery

1. Within this dialectical logic symbol system, ***an item*** that can be inserted, such as an "***x***", must be considered as "***absolute***," "***non-composite***," and "***indivisible***."
2. Items are neither ***propositions*** nor ***predicates***. If I had to step outside the system to explain what items are, I would say they are ***names***. These names, through the system's operations, can become "***nouns***, ***adjectives***, ***adverbs***, and ***definitions***."
3. I believe that there is a ***mechanism*** that can transform my dialectical logic symbol system into the form of ***classical logic***, but I am still researching it.

The structure of the basic logical formula

We introduce a symbol ~, which ***lacks*** specific logical meaning, to ***decompose*** double negation into the following formula:

¬·~·¬

The symbol ~ divides the abstraction of negation ¬· and the concretization of negation ·¬ into ***left*** and ***right*** sides, thus generating two logical positions: the position between ·¬ and ~ is called the "***first logic position***," and the position between ¬· and ~ is called the "***second logic position***."

1.Doctrine of Being' logical structure

¬·ὄ~x·¬

The '·' symbol represents "***abstraction***" or "***concretization***." For an item x, we can abstract it to become x· (placed to the left of "·"); or it can be concretized to become ·x (placed to the right of "·"). Here, x· signifies that the function of X in thought is ***suppressed***; whereas ·x indicates that the function of x in thought is ***expressed***.

2.The Doctrine of Essence: Reflective Categories' logical structure

x¬·ő~y·¬

There is an additional logic position here, called the ***third logic position***, which is to the left of ¬·.

3.The Doctrine of Essence: Categories of Actualities' logical structure

≡x¬·ő~y·¬

There is an additional logic position here, called ***the fourth logic position***, which is to the left of ≡.

Axiom One

ő

Explanation: ő can be ***freely written*** on paper or in thought.

Axiom Two

⌀

Explanation: ⌀ can be ***freely written*** on paper or in thought.

Explanation of the operations: Simple '***geometric symmetry'*** ensures the ***correctness*** of these operations.

Operation Rule One: Equivalence Transformation Rule of ≡, ¬·¬ and ἐ·ἐ

≡

¬·¬

or

¬·¬

≡

And

ἐ·ἐ

≡

or

≡

ἐ·ἐ

Operation Rule Two: Equivalence Transformation Rule between ǒ and ⌀

ǒ≡

or

≡ǒ

⌀

and

⌀≡

or

≡⌀

ǒ

Operation Rule Three: Relativity Conversion Rule

¬·ő~x·¬

¬·x~ő·¬

¬·x~∅·¬

Explanation: When ő and item are in a relative position between the first and the second logic position, and there is nothing in between to exchange for other items to destroy this relative position, then when this relativity is confirmed, the next logical formula must convert ő to ∅.

The Doctrine of Being

I will now demonstrate how all categorical operations are based on the correctness of ***geometric symmetry***, from the simplest, ***the Category of Becoming***, to the most complex, ***the Category of The Notion***:

Axiom Two and Operation Rule Two

∅
≡ő
¬·¬ő

¬·~ő·¬ID

The above is the true one-way beginning of dialectics. To understand this paragraph, you must first understand the operation of ID and my subsequent discussion of NB(ἐ), so you can skip here, and use Operation Rules to start directly from the following BC.

The Category of Becoming

BC

¬·~ő·¬ID

¬·ő~·¬

¬·∅~·¬

¬·~∅·¬

¬·~ő·¬

There are ***five*** *logical formulas* above, thus including ***four*** *logical transformations*. The geometric symmetry is reflected in the fact that the ***first*** logical formula and the ***fifth*** logical formula are identical, both being ¬·∼ǒ·¬.

BC - DB – (Categories)’ continuum

¬·∼ǒ·¬

¬·ǒ∼·¬ ← x*Category (n)

The above is the real mechanism of DB(x) formation. In terms of understanding, you should skip it first and come back to it later.

The Category of Determinate Being

DB(x)

¬·ǒ∼x·¬

¬·x∼ǒ·¬

¬·x∼∅·¬

¬·∅∼·¬

¬·ǒ∼·¬

DB () is the second category following BC, and like BC, there are ***five*** logical formulas above, thus including ***four*** logical transformations.

The difference from BC is that in DB (), the ***first*** logical formula and the ***fifth*** logical formula ***aren’t identical***. The ***fifth*** logical formula ¬·ǒ∼·¬ is ***missing*** an item x, while the first logical formula ¬·ǒ∼x·¬ contains an item x. The geometric symmetry here is only reflected in the fact that the ***symbol ǒ*** remains in ***the second logic position*** in both the ***first and fifth*** logical formulas.

Therefore, in my ***manuscript***, I state that DB () ***is not*** a category that can return to itself by relying ***solely on itself***. It requires items (hypothetically denoted as ***y***) generated from other categories to ***be inserted into the fifth*** logical formula ¬·ǒ∼·¬ of DB (), allowing it to ***return to the first*** logical formula ¬·ǒ∼y·¬ and thus reactivate the operations of DB (). In this way, DB () appeals to the ***geometric symmetry*** of ***the entire system***.

In fact, the following categories, up until ***the Category of Actuality***, are all similar to DB () in that their ***final logical formula*** requires an item to be inserted from other categories' transformed items. However, the categories ***after the Category of Actuality*** can fully return to themselves relying ***solely on their own structure***, manifesting ***geometric symmetry*** independently.

The Doctrine of Essence: Reflective Categories

The Category of Identity

ID(x)

x¬·ǒ~·¬

ǒ¬·x~·¬

or

ǒ¬·x~·¬

x¬·ǒ~·¬

The Category of Identity is the ***first category*** to utilize ***the third logic position***. The significance of the third logic position is that it is ***not subject to*** the mutual abstraction and concretization relative to the ***negation*** ¬, so the function of ID(x) is to allow ***free interchange*** between items in the second and third logic positions across two lines of logical formulas, ***without transforming ǒ into ⌀***.

Operation Rule Four: ID

This ***free interchangeability*** of ID () itself can later ***become an operator*** in more complex categories. The following is a demonstration of the usage of this operator in subsequent cases:

x¬·y~⌀·¬

y¬·x~⌀·¬ ID

On the ***right*** side of the second logical formula, ID is indicated, showing that the structure y¬·x~⌀·¬ is the result of applying ID as ***an operator*** to x¬·y~⌀·¬.

The Category of Opposition

OPP(x)

x¬·ŏ~·¬

¬·x~ŏ·¬

¬·ŏ~x·¬

ŏ¬·x~·¬

- Items in the third and second logic positions are moved ***backward*** to the second and first logic positions, respectively.
- The first two logical formulas of DB () ***interchange*** the second and first logic positions.
- After the interchange, items are ***moved to*** the third and second logic positions in a ***forward sequence*** instead of proceeding to the third formula of DB ().
- As long as an items like x does not continuously occupy the second and first logic positions in relation to ∅ across ***three consecutive formulas***, ŏ ***will not be transformed into ∅***.

Axiom One

ŏ

Axiom Three: **ADD**
ŏ¬·x~y·¬

The above is the actual formation process of TIF (x, y). The mechanism of Axiom Three: ADD will be introduced soon, so the understanding order and the real order will be merged here.

The Category of The Thing Itself

TIF (x, y)

ŏ¬·x~y·¬

ŏ¬·y~x·¬TIF

(fi) *TIF (): ŏ*(1) ∨ ŏ*(2)

The category of The Thing Itself (TIF) is extremely important because it explains how the items in this logic system are generated. I will explain the process below.

In the category of The Thing Itself, we have **generated *a second item, y***, thus filling the first to third logic positions. Since ǒ is in the third logic position here, it is not affected by ¬, and because the first two logic positions are already filled, ǒ¬·x∼y·¬ and ǒ¬·y∼x·¬ represent x and y together forming ***an indivisible, concrete whole*** with negation ¬, engaging in a mutual abstraction and concretization process across the first two logic positions.

TIF itself is also an operator, so we have a fifth Operation Rule:

Operation Rule Five: TIF

ǒ¬·x∼y·¬

ǒ¬·y∼x·¬TIF

Coupled with the indivisibility and totality just mentioned, we have the following two axioms:

Axiom Three: ADD

ǒ

ǒ¬·y∼x·¬

Explanation: For ǒ, we can add a structure in which the first and the second logic positions are filled with two items, such as ¬·y∼x·¬, in the next logical formula ***without changing its meaning.***

Axiom Four: SIMPT

ǒ¬·x∼y·¬

ǒ

Explanation: For a logical formula in which the third logic position is ǒ, like ǒ¬·y∼x·¬, we can remove the structure in which the first two logic positions are filled with two items in the next logical formula, such as ¬·y∼ x·¬ ***without changing its meaning.***

The above indicates that both ǒ¬·x∼y·¬ and ǒ¬·y∼x·¬ can be transformed into ǒ. However, this is ***not a simplification***, but rather a ***true result***. Since it is ***impossible*** to correctly ***analyze*** x or y in the first two negation-related logic positions, ***nor*** is it possible to analyze just the negation ¬, it is precisely this unanalyzable and inexpressible nature of the ***wholeness*** of the first two logic positions that makes ǒ in the third logic position the ***only expressible symbol***.

Now I want to show how this system can ***freely generate*** free items:

Axiom One

ǒ

ADD

ǒ¬·x~y·¬

ǒ¬·y~x·¬TIF

or

ADD

ǒ¬·y~x·¬

ǒ¬·x~y·¬TIF

Lastly, when we apply ***ID*** to either ǒ¬·y~x·¬ or ǒ¬·x~y·¬:

y¬·ǒ~x·¬ID → y

or

x¬·ǒ~y·¬ ID → x

In this way, we can ***generate*** items such as x or y from ***nothing***, and the items transformed through this arrow → x process, I call "***free items***," meaning they ***can be substituted*** into the logic positions of either themselves or other categories. So, we have the sixth Operation Rule:

Operation Rule six: Arrow →

x¬·ǒ~y·¬ →x

x·¬·y~ǒ·¬

…

(fi)*Category (): x*Category (1)

Explanation: The use of "→" signifies that when the continuum of thought progresses to a logical formula like x¬·ǒ~y·¬, where both the first and second logic positions are filled, ***the third logic position*** can transform into a free item. For instance, x¬·ǒ~y·¬ →x, and this free item should be noted in the free item section below the final logical formula of that continuum of thought as ***x*Category (1)***.

I define this type of logical formulas within the category that can generate free items using the arrow →. Each item can only be generated ***once***. If there are different items, for example, formulas that can generate x, y, ≡, ≡x, ≡y, ≡ἐ, etc., each of them can only be generated once.

All the categories that can be used as operators ***have now been introduced***. Therefore, the following categories will not have much textual explanation, and I will only demonstrate their ***geometric symmetry***. In this way, we can ***generate*** items such as x or y from ***nothing***, and the items transformed through this arrow → x process, I call "***free items***," meaning they ***can be substituted*** into the logic positions of either themselves or other categories.

However, if we view the entire system of categories as a ***continuum***—meaning that we can always connect the first and last logical formulas of one category to another in some way—the rule that a specific item can only be generated once within a category will apply to the ***entire continuum*** of the dialectical logic symbol system.

Once a continuum of categories has determined its direction based on transformation rules and has generated ***all possible items***, that continuum becomes ***a definite set*** of thoughts or knowledge. To continue this continuum, we then enter the ***inference phase*** of the dialectical logic symbol system, which involves the process of moving free items between categories.

However, the → used to generate free items ***interacts*** with the use of ID within a continuum, creating uncertainty before and after the application of ID. This causes a ***loss of completeness*** in one of the logical formulas that can be transformed. I will explain this with the second category of substantial relationship, SID1 ():

SID1(x, y)

≡ǒ¬·y~x·¬ →≡ǒ

ἐ≡ǒ¬·x~y·¬ →ἐ≡

ἐ≡x¬·ǒ~y·¬ID →ἐ≡x

The above are the first three logical formulas of SID1(x, y), where the third logical formula indicates that it is the result of using ID on the second logical formula. Without using ID, the second logical formula ***would have been able*** to fully transform into ἐ≡ŏ. However, due to the use of ID, it can only transform into ἐ≡. So we have the fifth axiom:

Axiom Five: ID Integrity Constraint Axiom

When ID is applied to a logical formula, it imposes a structural integrity constraint on one of the free items produced by the → transformation in the logical formulas before and after the use of ID.

All the categories that can be used as operators have now been introduced. Now, I will introduce two ways to ***organize*** the free items generated within a continuum. The first type of free items can ***be found*** to form part of each other's structure in the collection of transformed free items, which I abbreviate as (fi). The second type cannot, and I call them ***non-composite free items***, abbreviated as (ncfi). For example, if the set of items that can be transformed within the entire continuum are ἐ≡, ἐ≡x, ≡x, ≡ŏ, and ἐ·≡x, it is clear that ≡ŏ and ἐ·≡x do not form part of the structure of the other members. After this comparison, we can organize their free items in the categories and continuum as follows (where the free item is placed to the left of *, and the number in parentheses next to the category name indicates the logical formula from which it is transformed):

(fi) * SID1(): ἐ≡* SID1(2) ∧ ἐ≡x* SID1(3) ∧≡x* SID1(8)

(ncfi) * SID1(): ≡ŏ* SID1(1) ∧ ἐ·≡x*SID1(4)

Since all the categories that can be used as operators have now been introduced, the following categories will not have much textual explanation, and I will only demonstrate their ***geometric symmetry***.

The Category of Matter

MA(x)

x¬·ŏ~y·¬ID → x

x·¬·y~ŏ·¬

x¬·y~⌀·¬

x·¬·⌀~·¬

x¬·ő~·¬

(ncfi)*MA (): x* MA (1) ∨ x* MA (3)

In MA (), there are also ***five*** logical formulas above, thus including ***four*** logical transformations. The difference between MA () and DB () is that DB () uses negation as the ***axis*** for its return to itself, while MA () uses x as ***its axis***. This return to itself can be ***simply described*** as "x → x· → x," this simple description reflects the ***geometric symmetry*** of this category.

The free item x generated here should be ***annotated*** as ***x*MA (1)*** or x*MA (3). Additionally, I am considering allowing the second logical formula to generate x·, but x·*MA (2) should be restricted to being substituted only in the first logical position.

BC - DB – (Categories)' continuum

¬·~ő·¬

¬·ő~·¬ ← x*MA (1)

The above returns to the discussion of DB (x). Note that if x*MA (1) is used to form DB (x), the free items column is (fi)*MA (): None.

The Category of Form

FM (x, y)

x¬·ő~y·¬ → x

x·¬·y~ő·¬

x¬·y~⌀·¬

y¬·x~⌀·¬ ID → y

y·¬·⌀~·¬

y¬·ő~·¬

(ncfi)*FM (): x*FM (1) ∧ y*FM (4)

FM () is simply a category generated by ***applying ID*** to the ***third*** logical formula of MA (), that is, applying ID to x¬·y~⌀·¬ to produce y¬·x~⌀·¬ ID.

Axiom One

ǒ

Axiom Three

ǒ¬·x~y·¬

x¬·ǒ~y·¬ID → x

The Category of Force

F (x, y)

FM (x, y)

x¬·ǒ~y·¬ID → x

x·¬·y~ǒ·¬

x¬·y~⌀·¬

y¬·x~⌀·¬ID → y

y·¬·⌀~·¬

y¬·ǒ~·¬ ← x*F (1)

FM (y, x)

y¬·ǒ~x·¬ → y

y·¬·x~ǒ·¬

y¬·x~⌀·¬

x¬·y~⌀·¬ID → x

x·¬·⌀~·¬

x¬·ǒ~·¬ ← y*F (7)

(ncfi)*F (): y*F (4) ∧ x*F (10)

- The category of force F (x, y) is a ***composite category*** made of FM (x, y) and FM (y, x).
- The structure involves ***inserting the free item x*** from FM (x, y) into its ***last***

logical formula, forming FM (y, x).

- The ***free item y*** from FM (y, x) is then ***inserted*** into its own ***last*** logical formula, forming FM (x, y) again.

- This ***cyclic insertion*** of x or y into the last logical formula represents the self-returning motion of x or y.

This ***cyclical operation*** reflects the ***geometric symmetry*** of this category，and to describe this cycle simply, it can be represented as: ***“x → y → x”.***

Axiom One

ǒ

Axiom Three

ǒ¬·x~y·¬TIF

ǒ¬·y~x·¬TIF

The above are two axioms that use Axiom One and Axiom Three to construct the following category. The above ǒ¬·x~y·¬TIF and ǒ¬·y~x·¬TIF are both marked with TIF, which represents a kind of reversion.

The Category of Appearance

AP (x, y)

MA (y, x)

y¬·ǒ~x·¬ID→ y

y·¬·x~ǒ·¬

y¬·x~ø·¬

y·¬·ø~·¬

y¬·ǒ~·¬ID ← x*AP (8)

TIF (y, x)

ǒ¬·y~x·¬TIF

ǒ¬·x~y·¬TIF

MA (x, y)

x¬·ǒ~y·¬ID → x

x·¬·y~ǒ·¬

x¬·y~⌀·¬

x·¬·⌀~·¬

x¬·ǒ~·¬ ID ← y*AP (1)

(ncfi)*AP (): None

AP (x, y) is also a ***composite category*** that demonstrates the cyclicality of x and y, but it is composed of TIF () and MA (). The ***geometric symmetry*** of its cycle, if described simply, is: ***"x → ǒ → y → ǒ → x," or, actually no process*** at all.

AP (x, y) is a reversed category. This reversal is derived from TIF (y, x) itself and "→ y← y*AP (1)" and "→ x ← x*AP (8)" express.

Axiom One:
ǒ

Axiom Three: **ADD**
ǒ¬·y~x·¬

y¬·ǒ~x·¬ID

Axiom Four: **SIMPT**
y

Axiom Three: **ADD**
y¬·x~ǒ·¬

MA2(y, x) or MA2(x, y)

y¬·x~ǒ·¬ → y

x¬·y~ǒ·¬ ID

x·¬·ǒ~y·¬

x¬·⌀~y·¬

x·¬·~⌀·¬

x¬·~ǒ·¬ ←y*MA2 (1)

x¬·y~ǒ·¬

(ncfi)*MA2 (): None

MA2(y, x) is the ***only*** reflective category ***which is not a composite category*** within the doctrine of essence that can return to itself purely on its own, and this is achieved by substituting the y, transformed from MA2(y, x), into the last logical formula.

Or

If you have MA (y, x) and MA (x, y) you can do it like following too:

MA (yx'5)

y¬·ǒ~·¬

OPP (y'1)

¬·y~ǒ·¬ ←x*MA (xy'1)

MA2(x, y)

x¬·y~ǒ·¬

y¬·x~ǒ·¬ID

……

Additionally, its significance lies in the fact that it can serve as a ***Linking Formula*** between the ***reflective category*** in the doctrine of essence and the ***category of actuality***.

Connecting reflective category —category of actuality: CRA ()

CRA (x, y)

x¬·y~ǒ·¬ → x

x·¬·ǒ~y·¬

x¬·⌀~y·¬

Operation Rule Two

≡x¬·ǒ~y·¬ →≡x

(fi)*CRA (): x*CRA (1) ∧≡x* CRA (4)

The last logical formula, ≡x¬·ǒ~y·¬, is formed by ***adding*** ≡ in front of x¬·⌀~y·¬ and then transforming ⌀ into ǒ within the formula. ≡x¬·ǒ~y·¬ represents the structure of the ***category of actuality***.

The Doctrine of Essence: The Category of Actuality

The Category of Actuality Itself

AC (x, y)
≡x¬·ǒ~y·¬ →≡x
x≡ǒ¬·y~·¬
x≡y¬·ǒ~·¬ID
≡x¬·y~ǒ·¬ →≡x
≡x·¬·y~⌀·¬ →≡x·
≡x¬·⌀~·¬
x≡¬·ǒ~·¬
≡x¬·ǒ~a·¬ →≡x
(fi)*AC (): ≡x*AC (1) ∨ ≡x*AC (4) ∨ ≡x*AC (8)
(ncfi)*AC (): ≡x·*AC (5)

By adding ≡ to the ***far left*** of the logical formula, we gain ***an additional logic position*** to the left of ≡, called ***the fourth logic position***. This increases the ***range*** of logical operations. The overall ***geometric symmetry*** of AC (x, y) can be simply described as ***"≡x → x≡ → ≡x· → x≡ →≡x,"*** and the greatest significance of this category lies in the fact that it ***generates*** a ***new item, a***, within its own operations.

The ≡x generated by the first logical formula should be marked as ≡x*AC (1), and the third or fourth logical formula should allow the generation of ≡x*AC (4) or ≡x·*AC (5), but only one place can be chosen to generate ≡x. The same principle applies to the remaining categories of actualities, so I won't elaborate further.

Before entering the remaining categories of actualities there is a special category as follows:

Connect to Nothing

CON (x, y)

≡x¬·ǒ~y·¬ →≡

≡ǒ¬·x∼y·¬ID→≡ǒ

SIMPT

≡ǒ

⌀

(fi)*CON (): ≡*CON (1) ∧ ≡ǒ*CON (2)

In the Category of Actuality, there are three additional categories. I will list them here without further explanation, but essentially, they involve ***using ID*** to ***change the direction of operations***; otherwise, the explanation would be too lengthy:

Category of Possibility 1

POS1(x, y)

≡x¬·ǒ∼y·¬ →≡x

x≡ǒ¬·y∼·¬

x≡y¬·ǒ∼·¬ ID

y≡x¬·ǒ∼·¬ ID

≡y¬·x∼ǒ·¬ →≡y

≡y·¬·ǒ∼x·¬ →≡y·

≡y¬·⌀∼x·¬ →≡y

y≡¬·∼⌀·¬

≡y¬·∼ǒ·¬

(fi)*POS1 (): ≡y* POS1 (5) ∨ ≡y* POS1 (7)

(ncfi)*POS1 (): ≡x* POS1 (1) ∧ y·*POS1 (6)

Category of Possibility 2

POS2(x, y)

≡x¬·ǒ∼y·¬ →≡x

x≡ǒ¬·y∼·¬

x≡y¬·ǒ~·¬ ID

y≡x¬·ǒ~·¬ ID

y≡ǒ¬·x~·¬ ID

≡y¬·ǒ~x·¬ →≡y

≡y·¬·x~ǒ·¬ →≡y·

≡y¬·x~⌀·¬ →≡y

y≡¬·⌀~·¬

≡y¬·ǒ~·¬

(fi)*POS2 (): ≡y* POS2 (6) ∨ ≡y* POS2 (8)

(ncfi)*POS2 (): ≡x* POS2 (1) ∧ ≡y·*POS2 (7)

The special feature of the Category of Possibility is that its final logical formula is ***missing*** one item.

POS1(yx'9) ID ←x*POS1 (yx'1)

∴CONT (x, y)

The above is the mechanism whereby CONT (x, y) is formed by the self insertion of POS1 (y, x) itself, and there are various other ways.

Category of Contingency

CONT (x, y)

≡y¬·x~ǒ·¬ → ≡

≡x¬·y~ǒ·¬ID → ≡x

x≡y¬·ǒ~·¬

x≡ǒ¬·y~·¬ID

≡x¬·ǒ~y·¬ → ≡x

≡x·¬·⌀~y·¬ → ≡x·

≡x¬·~⌀·¬

x≡¬·~ǒ·¬

≡x¬·b~ǒ·¬ →≡

≡b¬·x~ǒ·¬ID → ≡b

(fi)*CONT (): [≡* CONT (1) ∨≡* CONT (9)] ∧ [≡x*CONT (2) ∨ ≡x*CONT (5)]

(ncfi) *CONT () ≡x·* CONT (6) ∧ ≡b* CONT (10)

The Category of Contingency is the ***final*** category within the category of actuality. Its characteristic is that it ***can also return*** to itself. Another important feature is that it can be used ***to connect*** commonly known reflective categories:

CRA2(x, y)

x¬·ǒ~y·¬ →x

x·¬·x~ǒ·¬

x¬·y~∅·¬ ID →x

Operation Rule Two

≡x¬·y~ǒ·¬

The ***connecting point*** is the ***third*** logical formula of ***MA(x)***, x¬·y~∅·¬ ID. By adding ≡ to it, x¬·y~∅·¬ ID is transformed into the ***last*** logical formula of CRA2(x, y), ≡x¬·y~ǒ·¬.

Category of Substantial Relationships

The Category of Substantial Relationships introduces ***the final symbol*** in the dialectical logic symbol system, "***self ɛ̇***." ɛ̇ is predefined as "both ***immediacy*** and ***mediacy***, and even as ***indeterminate or universal***." This category is unique because none of the four Categories of Substantial Relationships have their first and last logical formulas' ***structure*** identical. I believe this reflects the nature of "self ɛ̇," borrowing a concept from ***Buddhism***, which is that the nature of the self lies in ***transforming our world*** and ***changing actualities***.

Among the four Categories of Substantial Relationships, only "self ɛ̇" itself is considered to possess ***ultimate geometric symmetry*** in its self-returning nature, ***regardless of*** how its corresponding structure of actuality is completely transformed by the movement of "self ἐ."

The structure of actuality, ≡x¬·ǒ~y·¬, can only return to itself through the ***continuous use*** of two different Categories of Substantial Relationships. This belongs to the "inferential part" of the dialectical logic symbol system. Essentially, the alternating use of ***S () and S2 ()***, along with ***SID2 () and SID1 ()***, allows the structures of actuality to return to themselves reciprocally.

The ***geometric symmetry*** of the four Categories of Substantial Relationships can all be simply described as: ***"≡ → ἐ≡ → ἐ·≡ → ἐ·x≡ → ἐ·≡ → ἐ≡ → ≡."***

The detailed explanation and significance of the Category of Substantial Relationships are fascinating and rich, but the main focus here is to demonstrate ***geometric symmetry*** and methodology. For more details, please refer to my manuscript.

Relationship of Substantiality S ()

S (x, y)

≡x¬·ǒ~y·¬ →≡x

ἐ≡x¬·y~ǒ·¬ →ἐ≡x

ἐ·≡x¬·y~ø·¬ →ἐ·≡x

ἐ·x≡¬·ø~·¬

ἐ·≡x¬·ǒ~·¬

ἐ≡x¬·~ǒ·¬

≡x¬·a~ǒ·¬ →≡x

(fi)*S (): [≡x*S (1) ∨ ≡x*S2 (7)] ∧ ἐ≡x*S (2)

(ncfi)*S (): ἐ·≡x*S (3)

The final logical formula, ≡x¬·a~ǒ·¬, is the structure of the first logical formula of ***CONT ()***, so the CONT () category can also be said to ***originate*** from S (). Of course, within the scope of The Category of Actuality, we can also substitute items into ***POS1()*** to form CONT ().

Relationship of Substantiality SID1()

SID1(x, y)

≡ŏ¬·y~x·¬ →≡ŏ

ἐ≡ŏ¬·x~y·¬ →ἐ≡

ἐ≡x¬·ŏ~y·¬ID →ἐ≡x

ἐ·≡x¬·y~ŏ·¬ →ἐ·≡x

ἐ·x≡¬·y~⌀·¬

ἐ·≡x¬·⌀~·¬

ἐ≡x¬·ŏ~·¬

≡x¬·ŏ~a·¬ →≡x

(fi) * SID1(): ἐ≡* SID1(2) ∧ ἐ≡x* SID1(3) ∧≡x* SID1(8)

(ncfi) * SID1(): ≡ŏ* SID1(1) ∧ ἐ·≡x*SID1(4)

The key point I want to highlight about the ***geometric symmetry*** of SID1() is that its final logical formula ***is*** the structure of the first logical formula of SID2(), and ***vice versa***. Therefore, when we apply SID2() to the final logical formula of SID1(), we can ***return*** to the first logical formula of SID1().

Relationship of Substantiality SID2()

SID2(x, a)

≡x¬·ŏ~a·¬ →≡x

ἐ≡x¬·a~ŏ·¬ →ἐ≡x

ἐ·≡x¬·a~⌀·¬ →ἐ·≡x

ἐ·x≡¬·⌀~·¬

ἐ·≡x¬·ŏ~·¬

ἐ≡x¬·ŏ~b·¬ →ἐ≡

ἐ≡ŏ¬·x~b·¬ID →ἐ≡ŏ

≡ŏ¬·a~b·¬ →≡ŏ

(fi)*SID2 (): ≡x* SID2(1) ∧ ἐ≡x* SID2(2) ∧ ἐ≡*SID2(6) ∧ἐ≡ŏ* SID1(7) ∧≡ŏ*

SID1(8)

(ncfi)*SID2 (): ἐ·≡x*SID1(3)

The key point I want to highlight about the ***geometric symmetry*** of SID2() is that its final logical formula ***is*** the structure of the first logical formula of SID1(), and ***vice versa***. Therefore, when we apply SID1() to the final logical formula of SID2(), we can ***return*** to the first logical formula of SID2().

Relationship of Substantiality S2()

S2(x, a)

≡x¬·a~ǒ·¬ →≡x

ἐ≡x¬·ǒ~a·¬ →ἐ≡x

ἐ·≡x¬·∅~a·¬ →ἐ·≡x

ἐ·x≡¬·~∅·¬

ἐ·≡x¬·~ǒ·¬

ἐ≡x¬·ǒ~·¬

≡x¬·ǒ~c·¬ →≡x

(fi)*S2 (): [≡x*S2 (1) ∨≡x*S2 (7)] ∧ ἐ≡x*S2 (2)

(ncfi) *S2 (): ἐ·≡x*S2 (3)

S2 () then transforms the structure of the first logical formula of ***CONT ()*** into the logical structure of ***AC ()***, and its ***geometric symmetry*** is demonstrated in the fact that its final logical formula ***is*** the first logical formula of ***S ()***, while the final logical formula of S () is the first logical formula of S2 ().

Category of Causality

CAUS (x, y)

≡x¬·ǒ~y·¬ →≡x

ἐ≡x¬·y~ǒ·¬

x≡ἐ¬·y~ǒ·¬ ID →x≡

x≡y¬·ἐ~ǒ·¬ ID →x≡y

x·≡y¬·ǒ~ἐ·¬ →x·≡y

x·y≡¬·ø~ἐ·¬

x·≡y¬·~ø·¬

x≡y¬·~ǒ·¬

x≡¬·y~ǒ·¬ ID

≡x¬·ǒ~y·¬ →≡x

(fi)*CAUS (): x≡*CAUS (3) ∧ x≡y*CAUS (4)

(ncfi)CAUS (): x·≡y*CAUS (5) ∧ [≡x*CAUS (1) ∨ ≡x*CAUS (10)]

The Category of Causality is a category that uses ***ID*** to ***dismantle the "self ἐ"*** during its operation. Its first logical formula, ≡x¬·ǒ~y·¬, and its final logical formula, ≡x¬·ǒ~y·¬, are ***identical***.

When the following logical formulas of actualities occur between CAUS (x, y) and CAUS (y, x), x and y become "***mutually causal***":

MUCAC ()
≡x¬·ǒ~y·¬ID →≡
≡ǒ¬·x~y·¬ID →≡ǒ
≡ǒ¬·y~x·¬TIF →≡ǒ
≡y¬·ǒ~x·¬ID →≡
≡ǒ¬·y~x·¬ID →≡ǒ
≡ǒ¬·x~y·¬TIF →≡ǒ
≡x¬·ǒ~y·¬ID →≡
(fi)* MUCAC (x, y): [≡*MUCAC (1) ∨ ≡*MUCAC (4) ∨ ≡*MUCAC (7)] ∧ [≡ǒ*MUCAC (2) ∨ ≡ǒ *MUCAC (3) ∨ ≡ǒ *MUCAC (5) ∨ ≡ǒ *MUCAC (6)]

When x and y are thus set as "mutually causal," thinking must enter the final category of the doctrine of essence, the category of reciprocity, abbreviated as RECI ().

The Category of Reciprocity

RECI (x, y)

ἐ≡x¬·ǒ~y·¬

ἐ≡ὅ¬·x~y·¬ ID

ἐ·≡ὅ¬·y~x·¬

ἐ·≡y¬·ὅ~x·¬ ID

ἐ≡y¬·x~ὅ·¬

ἐ≡x¬·y~ὅ·¬ ID

ἐ·≡x¬·ὅ~y·¬

ἐ·≡ὅ¬·x~y·¬ ID

ἐ≡ὅ¬·y~x·¬

ἐ≡y¬·ὅ~x·¬ ID

ἐ·≡y¬·x~ὅ·¬

ἐ·≡x¬·y~ὅ·¬ ID

ἐ≡x¬·ὅ~y·¬

(fi)* RECI (x, y): ἐ≡* RECI (x, y) ∧ ἐ·≡* RECI (x, y)

The Category of Reciprocity is a ***perfectly cyclical*** category composed of ***twelve*** logical formulas, achieved by ***using ID alternately*** at intervals.

The Category of The Notion

N(ἐ)

ἐ·≡ὅ¬·x~y·¬ →ἐ·≡ὅ

ἐ·ἐ≡∅¬·x~y·¬ →ἐ·ἐ≡∅

ἐ·ἐ≡∅¬·y~x·¬TIF →ἐ·ἐ≡∅

ἐ·ἐ≡∅¬·x~y·¬TIF →ἐ·ἐ≡∅

ἐ·ἐ≡¬·∅~y·¬ ID

ἐ·≡ἐ¬·~∅·¬

ἐ≡ἐ¬·∼ő·¬

ἐ≡ἐ·¬·ő∼·¬

ἐ≡ἐ¬·⌀∼·¬

ἐ≡⌀¬·∼·¬ ID

ἐ¬·ő∼·¬

(fi)*N (): ἐ· ≡ő* N (1) ∧ [ἐ·ἐ≡⌀ * N (2) ∨ ἐ·ἐ≡⌀ * N (3) ∨ ἐ·ἐ≡⌀ * N (4)]

The Identity of Self ἐ and Being ő

ID (ἐ)

ἐ¬·ő∼·¬

ő¬·ἐ ∼·¬ID

Transition to Categories in the Doctrine of Being and Becoming

DB(ἐ)

¬·ἐ∼ő·¬

¬·ő∼ἐ·¬

¬·⌀∼ἐ·¬

¬·∼⌀·¬

BC

¬·∼ő·¬

¬·ő∼·¬

¬·⌀∼·¬

¬·∼⌀·¬

¬·∼ő·¬

However, if we isolate the free item ἐ·ἐ≡⌀ transformed by N(ἐ), the following transformations can be observed:

Theorem of Double Affirmations

ἐ·ἐ≡⌀

≡≡⌀

≡ὄ

⌀

This indicates that all the categories up to N(ἐ) have not explicitly applied the principle of transforming ἐ·ἐ into ≡, even though this transformation is inherently contained within the categories of substantial relationships. However, these categories use it with specificity, primarily for generating items rather than transforming ὄ and ⌀. The work of transforming ὄ and ⌀ is carried out by ≡ derived from ¬·¬, implying that ἐ is still regarded as substance.

In contrast, the Buddhist Category of Notion explicitly contains the principle of transforming ἐ·ἐ into ≡ and applies it to the transformation of ὄ and ⌀."

The Buddhist Category of Notion

NB(ἐ)

ἐ·≡ὄ¬·x~y·¬ →ἐ·≡ὄ

ἐ·ἐ≡⌀¬·x~y·¬ →ἐ·ἐ≡⌀

ἐ·ἐ≡⌀¬·y~x·¬ →ἐ·ἐ≡⌀

ἐ·ἐ≡⌀¬·x~y·¬ →ἐ·ἐ≡⌀

ἐ·ἐ≡¬·⌀~y·¬ ID

ἐ·≡ἐ¬·~⌀·¬

ἐ·ἐ¬·~ὄ·¬

ἐ·¬·ἐ~ὄ·¬ ID

ἐ¬·ὄ~ἐ·¬

ὄ¬·ἐ~ἐ·¬ ID

ὄ≡

∅

(fi)*NB (): ἐ· ≡ὄ* NB (1) ∧ [ἐ·ἐ≡∅ * NB (2) ∨ ἐ·ἐ≡∅ * NB (3) ∨ ἐ·ἐ≡∅ * NB (4)]

NB(ἐ) is a form of Notion that I derived from ***Buddhist scriptures***, and such a form is not found in Hegel's philosophy. Although Hegel's philosophy includes the form of the ***dual self ἐ***, this dual self ἐ is not considered ***equivalent*** to negation ¬. Therefore, in Hegel's logic, only ¬·¬ and ἐ·ἐ can be transformed into affirmation ≡.

However, from a Buddhist perspective, the self does not possess this kind of ***ultimate substantial nature***. Thus, we can consider the self ἐ as ***equivalent*** to negation ¬, allowing us to view affirmation ≡ as transformed from **¬·*ἐ*∼*ἐ*·¬**.

Theorem of Nothing ∅' Absoluteness

ὄ¬·ἐ∼ἐ·¬ ID

ὄ≡

∅

But

ὄ

∅≡

∅¬·ἐ∼ἐ·¬

¬·∅∼ἐ·¬ID

¬·∼∅·¬

This theorem explains: Given that ∅ has the ability to eliminate any items, ∅ does not have symmetry when converting ∅ and ὄ using ≡ generated by the absolute structure ¬·ἐ∼ἐ·¬ above, and it does not have symmetry, and That is, ∅≡ cannot be converted into ὄ when ≡ is understood as ¬·ἐ∼ἐ·¬, but ὄ≡ can be converted into ∅.

On the Correct Beginning of the Dialectical Logic Symbol System

Theorem of Nothing ∅' Absoluteness can be regarded as an axiom equivalent to the technique just used to combine the free items of NB(ἐ).

According to the above two axioms, ŏ≡ from the beginning of the dialectical logic symbol system is not a correct way to lead to ***the Absolute*** that the system originally intended to achieve, because ŏ≡ can only be represented by The latter two of the three structures ¬·ἐ~ἐ·¬, ἐ·ἐ and ¬·¬ are transformed into the expression "≡". The reason is that if we understand ŏ≡ as ŏ¬·ἐ~ἐ·¬, then the only operations that can be performed are the following two:

The first type: the infinite identity of ἐ and ŏ

ŏ¬·ἐ~ἐ·¬

ἐ¬·ŏ~ἐ·¬ ID

or

ἐ¬·ŏ~ἐ·¬

ŏ¬·ἐ~ἐ·¬ID

The second type: NB(ἐ)

ŏ¬·ἐ~ἐ·¬

ŏ≡

∅

This consideration out of the Absolute forces us to realize that there is only one possibility for the beginning of the dialectical logic symbol system: the beginning of the dialectical logic symbol system is the reverse reasoning of NB(ἐ) and the splitting of its inner meaning:

The Reverse Reasoning of NB(ἐ)

∅

ŏ≡

ŏ¬·ἐ~ἐ·¬

ἐ¬·ŏ~ἐ·¬ ID

ἐ·¬·ἐ~ŏ·¬

ἐ·ἐ¬·~ŏ·¬ID

ε̇·ε̇≡¬·~∅·¬

What is being split here is the inner meaning of ¬·ε̇~ε̇·¬ and ε̇·ε̇ as the basis for the conversion of ≡.

However, we lack any axioms or operation rules that allow The Reverse Reasoning of NB(ε̇) to produce any items, so the absolute foundation of the beginning of the dialectical logic symbol system differs slightly from Axiom One, introduced at the start of this paper. This is not to say that Axiom One is incorrect; rather, it demonstrates that we can hold two distinct attitudes toward dialectical thinking. I would describe the attitude of Axiom One as a Hegelian approach, while what I am about to discuss reflects an attitude that could stem from my understanding of Buddhist philosophy.

Since The Reverse Reasoning of NB(ε̇) cannot produce items, we are unable to explore how items arise from the foundation of truth. Thus, we need a specific technique: "to form combinations from the free items of the nearest categories that align with the free items of forward reasoning NB(ε̇) and N(ε̇)."

The free items in The Category of Reciprocity and in The Category of Causality connected by MUCAC(), which is mutually causal, are unique. The former is ε̇≡* RECI (x, y) ∧ ε̇·≡* RECI (x, y); the latter is [≡MUCAC (1) ∨ ≡MUCAC (4) ∨ ≡MUCAC (7)] ∧ [≡ŏMUCAC (2) ∨ ≡ŏ *MUCAC (3) ∨ ≡ŏ *MUCAC (5) ∨ ≡ŏ *MUCAC (6)]. These are special in that they lack any non-purely symbolic items, such as x, y, z, a, and so forth, making them similar to NB(ε̇) and N(ε̇). Furthermore, they are self-enclosed or self-circulating, with no space for inserted items, and this self-enclosure necessitates the following operation:

Combination One：Combination of RECI' free items

ε̇≡ combines ε̇·≡

∴

ε̇·ε̇≡

≡≡

Thus, we obtain the partial structure of Theorem of Double Affirmations: ≡≡, so we attempt something different：

Combination Two: The Combination of the free items of RECI and Mutual Causality

ἑ≡ combines ≡ὄ

or

ἑ·≡ combines ≡ὄ

∴

ἑ≡ὄ

or

ἑ·≡ὄ

then we use **Axiom Three ADD：**

ἑ≡ὄ¬·x~y·¬

or

ἑ·≡ὄ¬·x~y·¬

Thus, we obtain two of the logical formulas of SID1 ().

Through "Combination Two," we are able to create items at the beginning of the dialectical logic symbol system in the absolute sense. The combination method here indicates that the Theorem of Nothing (⌀)' Absoluteness represents the true infinite in this system. If we are to retain the operations of the dialectical logic symbol system, we must accept that the operations are finite.

Potential Alternative Understanding

Now I am going to use an alternative method, that is, the Tai Chi diagram method, to tell you whether you should engage in dialectical thinking and what methods are available.

—: Yang hexagram represents "advance"

- -: Yin hexagram represents "retreat"

Since the dialectical logical symbol system is a Self-Return system, both "advance and retreat" and "retreat and advance" must be used to express a Self-Return. The following picture discusses issues such as whether to use Axiom One or

Axiom Two. The small black dots in the picture are symbols representing abstraction and concretization.

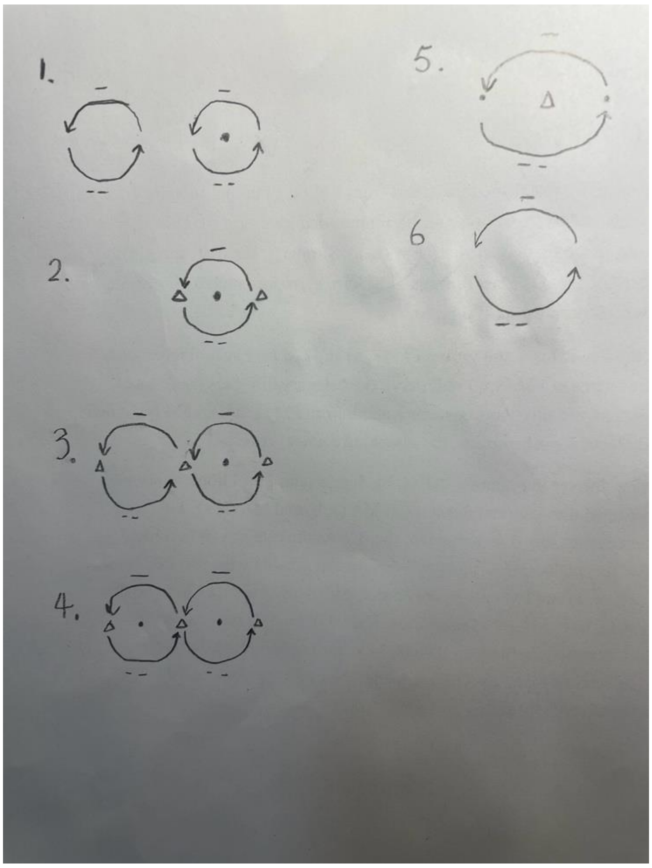

Figure 1

1.

Now we have the image on the left and the image on the right to choose from. We can choose the left side to represent that no axioms are used, and the directionality is imaginary; we can also choose the right side to represent that a certain axiom is used, and the directionality is imaginary, but wether it is imaginary or not isn’t relevant to the small black dot.

2.

If we select the right side and really want to represent the directionality, then we have to draw two small triangles on either side of the small black dot. But in this way, these two small triangles cannot produce their own "advance and retreat" and "retreat and advance". The one on the left can only "retreat and advance " relative to the one on the right; and the one on the right can only "advance and retreat" relative to the one on the left.

3.

Now, in order to make the generated things capable of both "advance and retreat" and "retreat and advance" again, we first let the small triangle on the left generate this Self-Return, so we are adding a third small triangle on the far left.

4.

Then we select the steps on the right according to 1. and create another small black dot. In this way, we get the structure of the dialectical logic formula, between two small black dots, in the middle are The second logic position and The third logic position, and the two small triangles as the poles are The fourth logic position and The first logic position. According to the reversal of the directionality of the arrow in the middle triangle, the fourth and first logic bits also have Self-Return.

Should the two small black dots be considered Self-Return? Meaning: Should these two little black dots be considered poles and therefore draw a center point to achieve this (and this leads to infinite generating)? Answer 1: Yes, but it cannot be drawn because there is already a small triangle in the middle Answer 2: No, the instruction is consistent with the facts. Both answers yield **failure** of actual action.

5.

Therefore, 4. represents an action of elimination (somewhat equivalent to the failure), which is the embodiment of the fictitiousness on the left side of 1. Therefore, we delete the triangle at two poles originally used to construct directionality.

6.

Delete everything that represent directionality and return to the left selection of 1.

The actions after the fourth point can potentially be regarded as the embodiment of ⌀¬·ἐ∼ἐ·¬.

The Classical Continuum

Before entering the ***inference phase***, we must first understand some continuums, among which the continuums of the categories of substantial relationships can be

infinite.

The Cyclical Continuum of S () and S2 ()

S (x, y)

≡x¬·ǒ~y·¬ →≡x

ἑ≡x¬·y~ǒ·¬ →ἑ≡x

ἑ·≡x¬·y~⌀·¬ →ἑ·≡x

ἑ·x≡¬·⌀~·¬

ἑ·≡x¬·ǒ~·¬

ἑ≡x¬·~ǒ·¬

≡x¬·a~ǒ·¬ →≡x

(fi)*S (): [≡x*S (1) ∨ ≡x*S2 (7)] ∧ ἑ≡x*S (2)

(ncfi)*S (): ἑ·≡x*S (3)

S2(x, a)

≡x¬·a~ǒ·¬ →≡x

ἑ≡x¬·ǒ~a·¬ →ἑ≡x

ἑ·≡x¬·⌀~a·¬ →ἑ·≡x

ἑ·x≡¬·~⌀·¬

ἑ·≡x¬·~ǒ·¬

ἑ≡x¬·ǒ~·¬

≡x¬·ǒ~d·¬ →≡x

(fi)*S2 (): [≡x*S2 (1) ∨ ≡x*S2 (7)] ∧ ἑ≡x*S2 (2)

(ncfi) *S2 (): ἑ·≡x*S2 (3)

S (x, d)

≡x¬·ǒ~d·¬ →≡x

ἑ≡x¬·d~ǒ·¬ →ἑ≡x

ἑ·≡x¬·d~⌀·¬ →ἑ·≡x

ἐ·x≡¬·⌀~·¬

ἐ·≡x¬·ὄ~·¬

ἐ≡x¬·~ὄ·¬

≡x¬·e~ὄ·¬ →≡x

(fi)*S (): [≡x*S (1) ∨ ≡x*S2 (7)] ∧ ἐ≡x*S (2)

(ncfi) *S (): ἐ·≡x*S (3)

S2 (x, e)

≡x¬·e~ὄ·¬ →≡x

ἐ≡x¬·ὄ~e·¬ →ἐ≡x

ἐ·≡x¬·⌀~e·¬ →ἐ·≡x

ἐ·x≡¬·~⌀·¬

ἐ·≡x¬·~ὄ·¬

ἐ≡x¬·ὄ~·¬

≡x¬·ὄ~f·¬ →≡x

(fi)*S2 (): [≡x*S2 (1) ∨ ≡x*S2 (7)] ∧ ἐ≡x*S2 (2)

(ncfi) *S2 (): ἐ·≡x*S2 (3)

The Cyclical Continuum of SID1 () and SID2 ()

SID1(x, y)

≡ὄ¬·y~x·¬ →≡ὄ

ἐ≡ὄ¬·x~y·¬ →ἐ≡

ἐ≡x¬·ὄ~y·¬ID →ἐ≡x

ἐ·≡x¬·y~ὄ·¬ →ἐ·≡x

ἐ·x≡¬·y~⌀·¬

ἐ·≡x¬·⌀~·¬

ἐ≡x¬·ὄ~·¬

≡x¬·ὄ~a·¬ →≡x

(fi) * SID1(): ε̇≡* SID1(2) ∧ ε̇≡x* SID1(3) ∧≡x* SID1(8)

(ncfi) * SID1(): ≡ǒ* SID1(1) ∧ ε̇·≡x*SID1(4)

SID2(x, a)

≡x¬·ǒ~a·¬ →≡x

ε̇≡x¬·a~ǒ·¬ →ε̇≡x

ε̇·≡x¬·a~⌀·¬ →ε̇·≡x

ε̇·x≡¬·⌀~·¬

ε̇·≡x¬·ǒ~·¬

ε̇≡x¬·ǒ~b·¬ →ε̇≡

ε̇≡ǒ¬·x~b·¬ID →ε̇≡ǒ

≡ǒ¬·b~x·¬ →≡ǒ

(fi)*SID2 (): ≡x* SID2(1) ∧ ε̇≡x* SID2(2) ∧ ε̇≡*SID2(6) ∧ ε̇≡ǒ* SID1(7) ∧≡ǒ* SID1(8)

(ncfi)*SID2 (): ε̇·≡x*SID1(3)

S (x, y) — SID1 (x, y)'s Connection

SSID1(x, y)

≡x¬·ǒ~y·¬ →≡

≡ǒ¬·x~y·¬ID →≡ǒ

≡ǒ¬·y~x·¬TIF

≡y¬·ǒ~x·¬ID →≡y

(fi)*SSID1 (): ≡*SSID1(1) ∧ ≡ǒ* SSID1(2) ∧ ≡y* SSID1(4)

The Influence of SSID1() on S (x, y):

Post S (x, y) by SSID1()

≡x¬·ǒ~y·¬ →≡

ε̇≡x¬·y~ǒ·¬ →ε̇≡x

ε̇· ≡x¬·y~∅·¬ →ε̇· ≡x

ε̇·x≡¬·∅~·¬

ε̇· ≡x¬·ǒ~·¬

ε̇≡x¬·~ǒ·¬

≡x¬·a~ǒ·¬ →≡x

(fi)*S (x, y): ≡*S (1) ∧ ε̇≡x*S (2) ∧≡x*S (7)

(ncfi)*S (x, y): ε̇· ≡x*S (3)

AC () — ∅

≡x¬·ǒ~y·¬ →≡

≡ǒ¬·x~y·¬ID →≡ǒ

≡ǒ ←

∅

Here, however, there is a possibility of leading to nothing ∅.

The Continuum of Causality

MUCAC ()

≡x¬·ǒ~y·¬ID →≡
≡ǒ¬·x~y·¬ID →≡ǒ
≡ǒ¬·y~x·¬TIF →≡ǒ
≡y¬·ǒ~x·¬ID →≡
≡ǒ¬·y~x·¬ID →≡ǒ
≡ǒ¬·x~y·¬TIF →≡ǒ
≡x¬·ǒ~y·¬ID →≡
or

MUCAC (x, y)

≡y¬·ǒ~x·¬ →≡

≡ǒ¬·y~x·¬ID →≡ǒ

≡ǒ¬·x~y·¬TIF →≡

≡x¬·ǒ~y·¬ID →≡x

or

MUCAC (y, x)

≡x¬·ǒ~y·¬

≡ǒ¬·x~y·¬ID →≡ǒ

≡ǒ¬·y~x·¬TIF →≡

≡y¬·ǒ~x·¬ID →≡y

The three types of causal relationships and their connection modes to actualities are very important because the application of ID or TIF to either ≡ǒ¬·y~x·¬ or ≡ǒ¬·x~y·¬ affects which formula transforms into ≡ǒ. This impacts the direction of causality. If both are possible, then the two are mutually causal.

MUCAC (x, y)

≡y¬·ǒ~x·¬ →≡

≡ǒ¬·y~x·¬ID →≡ǒ

≡ǒ¬·x~y·¬TIF →≡

≡x¬·ǒ~y·¬ID →≡x

(fi)* MUCAC (x, y): ≡*MUCAC (1) ∨ ≡*MUCAC (3)

(ncfi)* MUCAC (x, y): ≡ǒ* MUCAC (2) ∨≡x* MUCAC (4)

CAUS (x, y)

≡x¬·ǒ~y·¬ →≡x

ἐ≡x¬·y~ǒ·¬

x≡ἐ¬·y~ǒ·¬ ID →x≡

x≡y¬·ἐ~ǒ·¬ ID →x≡y

x·≡y¬·ǒ~ἐ·¬ →x·≡y

x·y≡¬·ø~ἐ·¬

x·≡y¬·~⌀·¬

x≡y¬·~ǒ·¬

x≡¬·y~ǒ·¬ ID

≡x¬·ǒ~y·¬ →≡x

(fi)*CAUS (): x≡*CAUS (3) ∧ x≡y*CAUS (4)

(ncfi)CAUS (): x·≡y*CAUS (5) ∧ [≡x*CAUS (1) ∨ ≡x*CAUS (10)]

The above illustrates x as the cause.

MUCAC (y, x)

≡x¬·ǒ~y·¬

≡ǒ¬·x~y·¬ID →≡ǒ

≡ǒ¬·y~x·¬TIF →≡

≡y¬·ǒ~x·¬ID →≡y

(fi)* MUCAC (): ≡*MUCAC (1) ∨ ≡*MUCAC (3)

(ncfi)* MUCAC (): ≡ǒ* MUCAC (2) ∨≡y* MUCAC (4)

CAUS (y, x)

≡y¬·ǒ~x·¬ →≡y

ἑ≡y¬·x~ǒ·¬ →≡

y≡ἑ¬·x~ǒ·¬ ID →y≡

y≡x¬·ἑ~ǒ·¬ ID →y≡x

y·≡x¬·ǒ~ἑ·¬ →y·≡x

y·x≡¬·⌀~ἑ·¬

y·≡x¬·~⌀·¬

y≡x¬·~ǒ·¬

y≡¬·x~ǒ·¬ ID

≡y¬·ǒ~x·¬ →≡y

(fi)CAUS (): y≡*CAUS (3) ∧ y≡x*CAUS (4)

(ncfi)CAUS (): y·≡x*CAUS (5) ∧ [≡y*CAUS (1) ∨ ≡y*CAUS (10)]

The above illustrates y as the cause.

MUCAC ()

≡x¬·ǒ~y·¬ID →≡

≡ǒ¬·x~y·¬ID →≡ǒ

≡ǒ¬·y~x·¬TIF →≡ǒ

≡y¬·ǒ~x·¬ID →≡

≡ǒ¬·y~x·¬ID →≡ǒ

≡ǒ¬·x~y·¬TIF →≡ǒ

≡x¬·ǒ~y·¬ID →≡

CAUS (x, y)

≡x¬·ǒ~y·¬ID →≡

ἑ≡x¬·y~ǒ·¬ →≡

x≡ἑ¬·y~ǒ·¬ ID →x≡

x≡y¬·ἑ~ǒ·¬ ID →x≡y

x·≡y¬·ǒ~ἑ·¬ →x·≡y

x·y≡¬·⌀~ἑ·¬

x·≡y¬·~⌀·¬

x≡y¬·~ǒ·¬

x≡¬·y~ǒ·¬ ID

≡x¬·ǒ~y·¬ →≡x

(fi)*CAUS (): [≡*CAUS (1) ∨ ≡*CAUS (2)] ∧ x≡*CAUS (3) ∧ x≡y*CAUS (4)

(ncfi)*CAUS (): x·≡y*CAUS (5) ∧ ≡x*CAUS (10)

CAUS (y, x)

≡y¬·ǒ~x·¬ID →≡

ἑ≡y¬·x~ǒ·¬ →≡

y≡ἑ¬·x~ǒ·¬ ID →y≡

y≡x¬·ἑ~ǒ·¬ ID →y≡x

y·≡x¬·ǒ∼ε̇·¬ →y·≡x

y·x≡¬·⌀∼ε̇·¬

y·≡x¬·∼⌀·¬

y≡x¬·∼ǒ·¬

y≡¬·x∼ǒ·¬ ID

≡y¬·ǒ∼x·¬ →≡y

(fi)CAUS (): [≡*CAUS (1) ∨ ≡*CAUS (2)] ∧ y≡*CAUS (3) ∧ y≡x*CAUS (4)

(ncfi)CAUS (): y·≡x CAUS (5) ∧ ≡y*CAUS (3)

The above illustrates mutual causality.

The Linear Sequence of the Categories of Causality

CAUS (a, b)

≡a¬·ǒ∼b·¬ →≡a

ε̇≡a¬·b∼ǒ·¬

a≡ε̇¬·b∼ǒ·¬ ID →a≡

a≡b¬·ε̇∼ǒ·¬ ID →a≡b

a·≡b¬·ǒ∼ε̇·¬ →a·≡b

a·b≡¬·⌀∼ε̇·¬

a·≡b¬·∼⌀·¬

a≡b¬·∼ǒ·¬

a≡¬·b∼ǒ·¬ ID

≡a¬·ǒ∼b·¬ →≡a

(fi)*CAUS (): a≡*CAUS (3) ∧ a≡b*CAUS (4)

(ncfi)*CAUS (): a·≡b*CAUS (5) ∧ [≡a*CAUS (1) ∨ ≡a*CAUS (10)]

MUCAC (a, b)

≡a¬·ǒ∼b·¬ →≡a

≡ǒ¬·a∼b·¬ID →≡

≡ǒ¬·b∼a·¬TIF →≡

≡b¬·ǒ∼a·¬ID →≡b

(fi)* MUCAC (a, b): ≡*MUCAC (2) ∨ ≡*MUCAC (3)

(ncfi)* MUCAC (a, b): ≡a* MUCAC (1) ∨≡b* MUCAC (4)

AC (b, a)

≡b¬·ǒ∼a·¬ID →≡b

b≡ǒ¬·a∼·¬

b≡a¬·ǒ∼·¬ ID

≡b¬·a∼ǒ·¬ →≡b

≡b·¬·a∼ø·¬ →≡b·

≡b¬·ø∼·¬

b≡¬·ǒ∼·¬

≡b¬·ǒ∼c·¬ →≡b

(fi)AC (b, a): ≡b*AC (1) ∨ ≡b*AC (4) ∨ ≡*bAC (8)

(ncfi)*AC (b, a): ≡b·*AC (5)

CAUS (b, c)

≡b¬·ǒ∼c·¬ →≡b

ἐ≡b¬·c∼ǒ·¬

b≡ἐ¬·c∼ǒ·¬ ID →b≡

b≡c¬·ἐ∼ǒ·¬ ID →b≡c

b·≡c¬·ǒ∼ἐ·¬ →b·≡c

b·c≡¬·ø∼ἐ·¬

b·≡c¬·∼ø·¬

b≡c¬·∼ǒ·¬

b≡¬·c∼ǒ·¬ ID

≡b¬·ǒ∼c·¬ →≡b

(fi)*CAUS (b, c): b≡*CAUS (3) ∧ b≡c*CAUS (4)

(ncfi)*CAUS (b, c): b·≡c*CAUS (5) ∧ [≡b*CAUS (1) ∨ ≡b*CAUS (10)]

MUCAC (b, c)

≡b¬·ǒ~c·¬ →≡b

≡ǒ¬·b~c·¬ID →≡

≡ǒ¬·c~b·¬TIF →≡

≡c¬·ǒ~b·¬ID →≡c

(fi)* MUCAC (b, c): ≡*MUCAC (2) ∨ ≡*MUCAC (3)

(ncfi)* MUCAC (b, c): ≡b* MUCAC (1) ∨≡c* MUCAC (4)

AC (c, b)

≡c¬·ǒ~b·¬ ID →≡c

c≡ǒ¬·b~·¬

c≡b¬·ǒ~·¬ ID

≡c¬·b~ǒ·¬ →≡c

≡c·¬·b~ø·¬ →≡c·

≡c¬·ø~·¬

c≡¬·ǒ~·¬

≡c¬·ǒ~d·¬ →≡c

(fi)*AC (c, d): ≡c*AC (1) ∨ ≡c*AC (4) ∨ ≡c*AC (8)

(ncfi)*AC (c, d): ≡c·*AC (5)

CAUS (c, d)

≡c¬·ǒ~d·¬ →≡c

ἐ≡c¬·d~ǒ·¬

c≡ἐ¬·d~ǒ·¬ ID →c≡

c≡d¬·ἐ~ǒ·¬ ID →c≡d

c·≡d¬·ǒ~ἐ·¬ →c·≡d

c·d≡¬·⌀~ɛ̇·¬

c·≡d¬·~⌀·¬

c≡d¬·~ǒ·¬

c≡¬·d~ǒ·¬ ID

≡c¬·ǒ~d·¬ →≡c

(fi)*CAUS (c, d): c≡*CAUS (3) ∧ c≡d*CAUS (4)

(ncfi)*CAUS (c, d): c·≡d*CAUS (5) ∧ [≡c*CAUS (1) ∨ ≡c*CAUS (10)]

Thus, we have:'a is the cause of b' → 'b is the cause of c' → 'c is the cause of d'… and so on, continuing in this manner.

Inference in the Dialectical Logic Symbol System

Inference in the dialectical logic symbol system involves the expansion of categories and thought continuums. This expansion is guided by a single simple rule: the "move" of free items between different logical formulas. Such moves generate new categorical pathways and new thought continuums, and only when these new pathways and continuums are created can the original free items be moved back into the premises of existing categories or thought continuums.

The 'purpose' and 'certainty' of inference lie in returning thought as swiftly as possible to those premises that already possess a self-returning structure. In this process, the 'newly generated categorical pathways and continuums' produced by returning to these premises serve as the 'conclusions' of inference in the dialectical logic symbol system.

Axiom Six: Necessity of Inference

x¬·ǒ~y·¬ →x*Category(n)
Category (a)
¬·ǒ~a·¬ ←x*Category(n)
x¬·ǒ~a·¬ →x

The above operation is not allowed.

Explanation: “Extracting x as a free item, inserting it into a formula within another category, and then immediately extracting x again” is not permitted. This means that x¬·ǒ∼a·¬ must undergo further operations before x can be extracted again, which implies a process of “inference.”

In the process of inference, if a free item, such as x, is introduced into a formula like ¬·ǒ∼a·¬, forming a category with x¬·ǒ∼a·¬ as the first formula (e.g., FM (x, a)), then x*FM (xa’4) can be derived and subsequently reinserted into x¬·ǒ∼y·¬ as a free item in the position indicated by →x. Through the marking of the inference process, we can track the final position of x as a free item.

Inference using F (x, y) and AP (a, b) as premises

Premise 1
F (x, y)

FM (x, y) 1~6

x¬·ǒ∼y·¬ →x

x·¬·y∼ǒ·¬

x¬·y∼⌀·¬

y¬·x∼⌀·¬ID → y

y·¬·⌀∼·¬

y¬·ǒ∼·¬ ← x*F (1)

FM (y, x) 7~12

y¬·ǒ∼x·¬ → y

y·¬·x∼ǒ·¬

y¬·x∼⌀·¬

x¬·y∼⌀·¬ID → x

x·¬·⌀∼·¬

x¬·ǒ∼·¬ ← y*F (7)

(ncfi)*F (): y*F (4) ∧ x*F (10)

Premise 2
AP (a, b)

MA (a, b) 1~5

a¬·ǒ~b·¬ ID → a

a·¬·b~ǒ·¬

a¬·b~ø·¬

a·¬·ø~·¬

a¬·ǒ~·¬ ← b*AP (ab'8)

TIF (a, b) 6~7

ǒ¬·a~b·¬ TIF

ǒ¬·b~a·¬ TIF

MA (b, a) 8~12

b¬·ǒ~a·¬ ID → b

b·¬·a~ǒ·¬

b¬·a~ø·¬

b·¬·ø~·¬

b¬·ǒ~·¬ ← a*AP (ab'1)

(fi)*AP (): None

Conclusions

1.

FM (a, x)

a¬·ǒ~x·¬ → a

a·¬·x~ǒ·¬

a¬·x~ø·¬

x¬·a~ø·¬ ID → x

x·¬·⌀∼·¬

x¬·ǒ∼·¬

(ncfi)*FM*(): a*FM (ax'1)

2.

FM (b, y)

b¬·ǒ∼y·¬→ b

b·¬·y∼ǒ·¬

b¬·y∼⌀·¬

y¬·b∼⌀·¬ID → y

y·¬·⌀∼·¬

y¬·ǒ∼·¬

(ncfi)*FM (b, y): b*FM (by'1) ∧ y*FM (by'4)

3.

FM (y, a)

y¬·ǒ∼a·¬→ y

y·¬·a∼ǒ·¬

y¬·a∼⌀·¬

a¬·y∼⌀·¬ID → a

a·¬·⌀∼·¬

a¬·ǒ∼·¬

(ncfi)*FM (): y*FM (ya'1) ∧ a*FM (ya'4)

4.

FM (x, b)

x¬·ǒ∼b·¬→ x

x·¬·b∼ǒ·¬

x¬·b∼⌀·¬

b¬·x∼⌀·¬ID → b

b·¬·⌀∼·¬

b·¬·ǒ∼·¬

(ncfi)*FM*(): x*FM (xb'1) ∧ x*FM (xb'4)

Mechanism of F – AP 3

[AP (ab'5) ← x*F (xy'10)] ∧ [AP (ab'12) ← y*F (xy'4)]
∴ FM (a, x) ∧ FM (b, y)

[FM (by'6) ← a*FM (ax'1)] ∧ [FM (ax'6) ← b*FM (by'1)]

∴ FM (y, a) ∧ FM (x, b)

[F (xy'4) ← y*FM (ya'1)] ∧ [F (xy'10) ← x*FM (xb'1)]

∴ F (x, y) restored

[FM (ya'6) ← b*FM (xb'4)] ∧ [FM (xb'6) ← a*FM (ya'4)]

∴ AP (a, b) restored

As the author, it is my responsibility to keep the initial setting of the system as stable as possible, but it will be very unwise for me to imagine all inferences and applications. If you truly feel that this system has the potential to articulate yourself in a better way, then I wish I can officially become a reader with you, so we could build the equations together.